



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,607	10/26/2005	Chhiu-Tsu Lin	2384.00060	2108

7590 09/27/2010
Kenneth I Kohn
Kohn 7 Associates
30500 Northwestern Hwy
Suite 410
Farmington Hills, MI 48334

EXAMINER

JARRETT, LORE RAMILLANO

ART UNIT	PAPER NUMBER
----------	--------------

1797

MAIL DATE	DELIVERY MODE
-----------	---------------

09/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,607	Applicant(s) LIN, CHHIU-TSU	
	Examiner LORE JARRETT	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/30/10.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/27/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/30/10 has been entered.

Response to Amendment

Status of Claims

2. Applicant's reply filed on 4/30/10 is acknowledged. Claims 1-17 are pending. Claims 12-17 are withdrawn. Claims 1-11 are under examination.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 6, and 11 are rejected because it cannot be determined whether applicant intended to claim an additional surface or intended to refer to the "predetermined surface." If the latter, then "a surface" (in line 3 of claim 1) should be

Art Unit: 1797

amended to "the surface." For examination purposes, the Office will interpret that applicant intended the latter.

Claims 3 and 8 are rejected because the claimed terms, "Fichlor, sarinase, somanase, and parathion hydrolase," are indefinite. Is it unclear how these terms relate to the thymol blue indicator. For examination purposes, the Office will interpret these terms as the intended use terms.

Prior art rejections

5. In light of applicant's claim amendments, the rejections over the prior art are withdrawn. New rejections follow.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al. ("Dunn," US 5200334, previously cited) in view of Anvar et al. ("Anvar," US Pub. No. 2003/0224530, newly cited).

As to claims 1, 6, and 11, Dunn discloses a charge-transfer chemical sensor comprising: a sol-gel material affixable to a predetermined surface, and indicating means within said sol-gel for detecting and signaling a presence of at least one chemical (i.e. col. 1, line 53 to col. 2, line 13; col. 7, line 59 to col. 10, line 5). Furthermore, the claim language, "charge-transfer indicating means . . . for" does not invoke 35 USC 112, sixth paragraph because the claim language appears to be modified by sufficient structure, material, or acts for achieving the specified function.

As to claims 1, 6, and 11, Dunn does not specifically disclose a backing that enables affixation to the predetermined surface.

Anvar discloses, in one embodiment, a sensor having three layers as shown in the FIGURE. The substrate (10) has a first sol-gel layer (12) deposited on it, then a second sol-gel layer (14) deposited on the first sol-gel layer (12), and finally a diffusion control layer (16) deposited on the second sol-gel layer (14). The adhesion of sol-gel layers to the substrate can be promoted by an adhesion layer (18) that contains linker molecules (e.g. glutaraldehyde) which connect functional groups in between the substrate (10) and the first sol-gel layer (12). The adhesion of sol-gel layers can be promoted by an adhesion layer (20) between the first sol-gel layer (12) and the second sol-gel layer (14), and between the second sol-gel layer (14) and the diffusion control

Art Unit: 1797

layer (16). The diffusion control layer (16) can be made of sol-gel or other material adapted to control the diffusion of desired material into the underlying sol-gel layers.

[0012] In other embodiments, the sensor can have any number of layers, including any combination of sol-gel layers and diffusion control layers adhered together with an adhesion layer. The term "adhesion layer" ("backing") refers to any thin film or monolayer adapted to maintaining the contact or promote adhesion between the one sol-gel layer and another sol-gel layer, or a sol-gel and a substrate. See [0001]-[0039].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Dunn's sensor by including a backing to enable the sensor to be affixable to a surface because it would be desirable to have a layer adapted to maintain the contact or promote adhesion between the sol-gel layer and the substrate (i.e. Anvar, [0012]).

As to claims 2 and 7, the modified Dunn discloses that the indicating means includes colorimetric signal means for signaling the presence of at least one chemical (i.e. col. 1, line 53 to col. 2, line 13; col. 7, line 59 to col. 10, line 5). Furthermore, the claim language, "colorimetric signal means for" does not invoke 35 USC 112, sixth paragraph because the claim language appears to be modified by sufficient structure, material, or acts for achieving the specified function.

As to claims 3 and 8, the modified Dunn discloses that the signal means is selected from the group consisting essentially of an indicator with Cu (II), an indicator with CuZnSOD (i.e. col. 1, line 53 to col. 2, line 13; col. 7, line 59 to col. 10, line 5).

As to claims 4 and 9, the modified Dunn discloses that the sol-gel is an optically transparent xerogel (i.e. col. 1, line 53 to col. 2, line 13; col. 7, line 59 to col. 10, line 5).

As to claims 5 and 10, the modified Dunn discloses that his sensor is capable of detecting components selected from the group consisting essentially of chemical warfare agents, agricultural pesticides, and insecticides because Dunn discloses the structural features of the claimed sensor. Furthermore, the type of chemical being detected does not appear to positively limit the structure of the claimed sensor.

9. **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wicks et al. ("Wicks," US 5637507, previously cited) in view of Anvar.

As to claims 1, 6, and 11, Wicks discloses a charge-transfer chemical sensor comprising: a sol-gel material affixable to a predetermined surface, and indicating means within said sol-gel for detecting and signaling a presence of at least one chemical (i.e. col. 4, line 3 to col. 5, line 10; col. 5, line 49 to col. 10, line 64).

Furthermore, the claim language, "indicating means . . . for" does not invoke 35 USC 112, sixth paragraph because the claim language appears to be modified by sufficient structure, material, or acts for achieving the specified function.

As to claims 1, 6, and 11, Wicks does not specifically disclose a backing that enables affixation to the predetermined surface.

See Anvar *supra*.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Wick's sensor by including a backing to enable the sensor to be affixable to a surface because it would be desirable to have a layer adapted to maintain

Art Unit: 1797

the contact or promote adhesion between the sol-gel layer and the substrate (i.e. Anvar, [0012]).

As to claims 2 and 7, the modified Wicks discloses that the indicating means includes colorimetric signal means for signaling the presence of at least one chemical (i.e. col. 4, line 3 to col. 5, line 10; col. 5, line 49 to col. 10, line 64). Furthermore, the claim language, “colorimetric signal means for” does not invoke 35 USC 112, sixth paragraph because the claim language appears to be modified by sufficient structure, material, or acts for achieving the specified function.

As to claims 3 and 8, the modified Wicks discloses that the signal means is selected from the group consisting essentially of an indicator with Cu (II), an indicator with thymol blue/Fichlor (i.e. col. 4, line 3 to col. 5, line 10; col. 5, line 49 to col. 10, line 64).

As to claims 4 and 9, the modified Wicks discloses that the sol-gel is an optically transparent xerogel (i.e. col. 4, line 3 to col. 5, line 10; col. 5, line 49 to col. 10, line 64).

As to claims 5 and 10, the modified Wicks discloses that his sensor is capable of detecting components selected from the group consisting essentially of chemical warfare agents, agricultural pesticides, and insecticides because Dunn discloses the structural features of the claimed sensor. Furthermore, the type of chemical being detected does not appear to positively limit the structure of the claimed sensor. (i.e. col. 4, line 3 to col. 5, line 10; col. 5, line 49 to col. 10, line 64).

Response to Arguments

10. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LORE JARRETT whose telephone number is (571)272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LORE JARRETT/
Primary Examiner, Art Unit 1797

9/23/10